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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,944	03/05/2002	Bar-Chung Hwang	JCLA5862	7087

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EXAMINER

LAM, HUNG H

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/091,944

Applicant(s)

HWANG, BAR-CHUNG

Examiner

Hung H. Lam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-5 is/are allowed.
- 6) ☒ Claim(s) 6-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendments, filed on 07/19/05, have been entered and made of record. Claims 1-11 are pending.

In review of Applicant's amendment to Fig. 3, claims 1 and 4, the objections are hereby withdrawn.

Specification

2. The disclosure is objected to because of the following informalities: "A SACNNER" in the amended title should be changed to "A SCANNER". Appropriate correction is required.

Response to Arguments

3. Applicant's arguments see Amendment (Remarks), Page. 8, filed 07/19/05, with respect to the rejection(s) of claim(s) 6-11 have been fully considered but they are not persuasive.

The Applicant argue that Takemura fails to teach, suggest or disclose "a transfer controller coupled to a charge coupled device, and providing a transfer signal and a charge-shift control signal; providing a transfer signal and a charge-shift control signal; simultaneously in once transferring a charge data respectively corresponding to one of the primary colors to the shift register through the transfer gate when the transfer signal is true; shifting the charges data corresponding to one of the primary colors in accordance with the charge-shift control signal".

The Examiner respectfully disagrees. Takemura teaches a transfer controller (Fig. 1; shutter K2 and driver 14) coupled to a charge-coupled device (CCD 16), and providing a transfer signal and a charge-shift control signal (see Fig. 1, transfer signal/ signal outputs from shutter 12; charge-shift clock signals H1-H2 are interpreted as the charge-shift control signal);

simultaneously in once transferring a charge data respectively corresponding to one of the primary colors to the shift register through the transfer gate when the transfer signal is true (Figs. 3A-3B; Col. 4, Ln. 5-13; Col. 4, Ln. 22-43; charges are transferred to high speed transfer section 20 and RGB storage section 22, 54 when shutter 12 output signals to driver 14 to turn on P1, and P2 for summing and transferring RGB in odd-even pixels from section 18 to 20; it is inherent that the transfer gates must be included and located between pixels 18 and vertical transfer sections 20 in order for the charge couple device to function as disclosed); and

shifting the charges data corresponding to one of the primary colors in accordance with the charge-shift control signal (Figs. 1 and 12, storage section 22; Col. 5, Ln. 40-45; Col. 5, 65-68 – Col. 6, Ln. 1-2; Col. 9, Ln. 15-21; because of the R, G, and B arrangement in storage section 54 and signals down-warding from storage section 54 in units of lines, output circuit 26 must inherently shifts out the charges of primary colors sequentially to amplifier 44 in according to horizontal charge-shift clock signals H1-H2).

In view of the above, the Examiner believes that the broadest interpretation of the present claimed invention does in fact read on the cited reference for at least the reasons discussed above and as stated in the detail Office Action as follows. This Office Action is now made final.

Claim Rejections - 35 USC § 102

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claims 6-9, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Takemura (US-4,831,453).

Regarding **claim 6**, Takemura discloses a method of controlling a charge coupled device of a scanner (col. 5, Ln. 1), the charge coupled device having ability to process a plurality of primary colors, the charge coupled device including a shift register and a transfer gate (it is inherent that the transfer gates must be included and located between pixels 18 and vertical transfer sections 20 in order for the charge couple device to function as disclosed), the control method comprising:

providing a transfer signal and a charge-shift control signal (see Fig. 1, transfer signal/signal outputs from shutter 12; charge-shift clock signals H1-H2 are interpreted as the charge-shift control signal).

simultaneously in once transferring a charge data respectively corresponding to one of the primary colors to the shift register through the transfer gate when the transfer signal is true (Figs. 3A-3B; Col. 4, Ln. 5-13; Col. 4, Ln. 22-43; charges are transferred to high speed transfer section 20 and RGB storage section 22, 54 when shutter 12 output signals to driver 14 to turn on P1, and P2 for summing and transferring RGB in odd-even pixels from section 18 to 20); and

shifting the charges data corresponding to one of the primary colors in accordance with the charge-shift control signal (Figs. 1 and 12, storage section 22; Col. 5, Ln. 40-45; Col. 5, 65-

68 – Col. 6, Ln. 1-2; Col. 9, Ln. 15-21; because of the R, G, and B arrangement in storage section 54 and signals down-warding from storage section 54 in units of lines, output circuit 26 must inherently shifts out the charges of primary colors sequentially to amplifier 44 in according to horizontal charge-shift clock signals H1-H2).

Regarding **claim 7**, Takemura discloses the control method further comprising:

shifting the charge data of the primary colors with respect to one of the charge-shift clock signals from the shift register according to the charge-shift clock signals (Figs. 3A,3B, 12; Col. 4, Ln. 50-63; Col. 5, Ln. 55-64; Takemura teaches in Col. 9, Ln. 11-21 an additional arrangement for storing RGB color in three storage sections 22. Thus the charge pixels 18 and high-speed transfer section 20 must inherently store and transfer R, G, and B in each line/row. When charge-shift clock/ P1 is high, R color from odd line is transferred to 20; When P2 is high, G color from even line is also transferred to 20), and then sequentially shift the charge data of the primary colors with respect to another one of the charge-shift clock signals from the shift register (Figs. 1 and 12, storage section 22; Col. 5, Ln. 40-45; Col. 5, 65-68 – Col. 6, Ln. 1-2; Col. 9, Ln. 15-21; because of the R, G, and B arrangement in storage section 54 and signals down-warding from storage section 54 in units of lines, output circuit 26 must inherently shifts out the charges of primary colors sequentially to amplifier 44 in according to horizontal charge-shift clock signals H1-H2).

Regarding **claim 8**, Takemura discloses the control method of claim 6, further comprising:

providing a plurality of charge-shift control signals (Figs. 1 and 5, charge-shift clock signals/ V1-V4, F1-F4, Ps, P1-P2 and H1-H2); and

sequentially generating a plurality of charge-shift enable signals with respect to the primary colors, when the transfer signal is true (Figs. 1 and 5; Takemura teaches that HP and VP are used to enable the charge-shift clock signals H1-H2 wherein the respected primary color are transferred corresponding to signal sent from shutter 12 to driver 14. Driver 14 thus sends HP and VP enable signals to horizontal logic circuit 42 of Fig. 5).

Regarding **claim 9**, Takemura discloses the control method wherein after the charge-shift enable signals and the charge-shift control signal are operated with a logic operation (see Fig. 5, HP-VP, Horizontal logic circuit 42), the charge-shift clock signals are sequentially shifted out (Fig. 6A-6B, H1-H2 clock signals shift charges corresponding to primary colors to the output circuit 26 sequentially).

Regarding **claim 11**, Takemura discloses the improved control system wherein the primary colors include red R, Green G, and Blue B (Col. 5, Ln. 40-45; col. 9 ll. 14-21).

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takemura in view of Hieda (US-4,782,394).

Regarding **claim 10**, Takemura fails to explicitly disclose the control method wherein the logic operation includes an OR operation. However, the limitations are well known in the art as taught by Hieda.

In the same field of endeavor, Hieda teaches a signal generating circuit system enabling the single-phase frame-transfer CCD to switch between normal and short integration mode. (Col. 15, Ln. 10-23). Hieda further teaches the use of plurality of “OR” gate logic to pass and apply pulses to vertical transfer pulse generating section (Col. 13, Ln. 20-25). In light of the teaching from Hieda, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the plurality of “OR” gate taught by Hieda into the teaching of Takemura in order to provide a signal generating method using less control signals lines (Hieda, Col. 13, Ln. 60-63) and small number of externally mounted circuit (Hieda; Col. 15, Ln. 10-15).

Allowable Subject Matter

8. Claims 1-5 are allowed.

The following is an examiner’s statement of reasons for allowance:

Regarding claims 1-3, please note the reasons for allowance set forth in the office action dated 3/24/2005.

Regarding claim 4, the prior art of record fails to teach or fairly suggest, “A control system for a charge coupled device of a scanner, the charge coupled device having ability to

process a plurality of primary colors, the charge coupled device at least including a shift register and a transfer gate, the control system comprises:

a transfer controller, coupled to the charge couple device, used to provide a transfer signal and a plurality of charge-shift control signals, each of which corresponds to one of the primary colors, wherein the charge coupled device is controlled by the transfer signal, and all charge data with respect to the primary colors are transferred to the shift register through the transfer gate in one operation when the transfer signal is true; wherein the plurality of charge-shift control signals are coupled to the shift register so that the shift-register shift out the charge data of one of the primary colors when triggered by its corresponding charge-shift control signal”.

Regarding claim 5, the claims are allowed as being dependent of claims 4 respectively.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung H. Lam whose telephone number is 571-272-7367. The examiner can normally be reached on Monday - Friday 8AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on 571-272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HL

09/28/05


DAVID L. OMETZ
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EXAMINER